HW Repair Guide
SM-T310 (LT01)

June, 2013

HHP Global CS team

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Introduction of SM-T310

Feature

- 8” Display
- Slim Design Tablet

Specification

Item	spec.
AP	1.5GHz Dual Core(Exynos 4212)
OS	Android JB Prime
Memory	16GB NAND + 1.5GB RAM
Display	**8” TFT** (1280x800)
Camera	5MP + 1.3MP
Sensor	Accelerometer, Magnetic, Light
Connectivity	BT4.0, WiFi a/b/g/n
GPS	A-GPS + GLONASS
Battery	4450mA

Boot Recovery (1/10)

- **Brief JTAG process for SM-T310**

  1) Copying Bootloader File to external SD Card, using normal SM-T310
  2) inserting the SD card to defective phone, and copy the bootloader file to the defective Phone
  3) After downloading bootloader file to the defective phone, enter the download mode with the phone, and download Full S/W(PIT, PDA, CSC)

- **Pre-requisite**

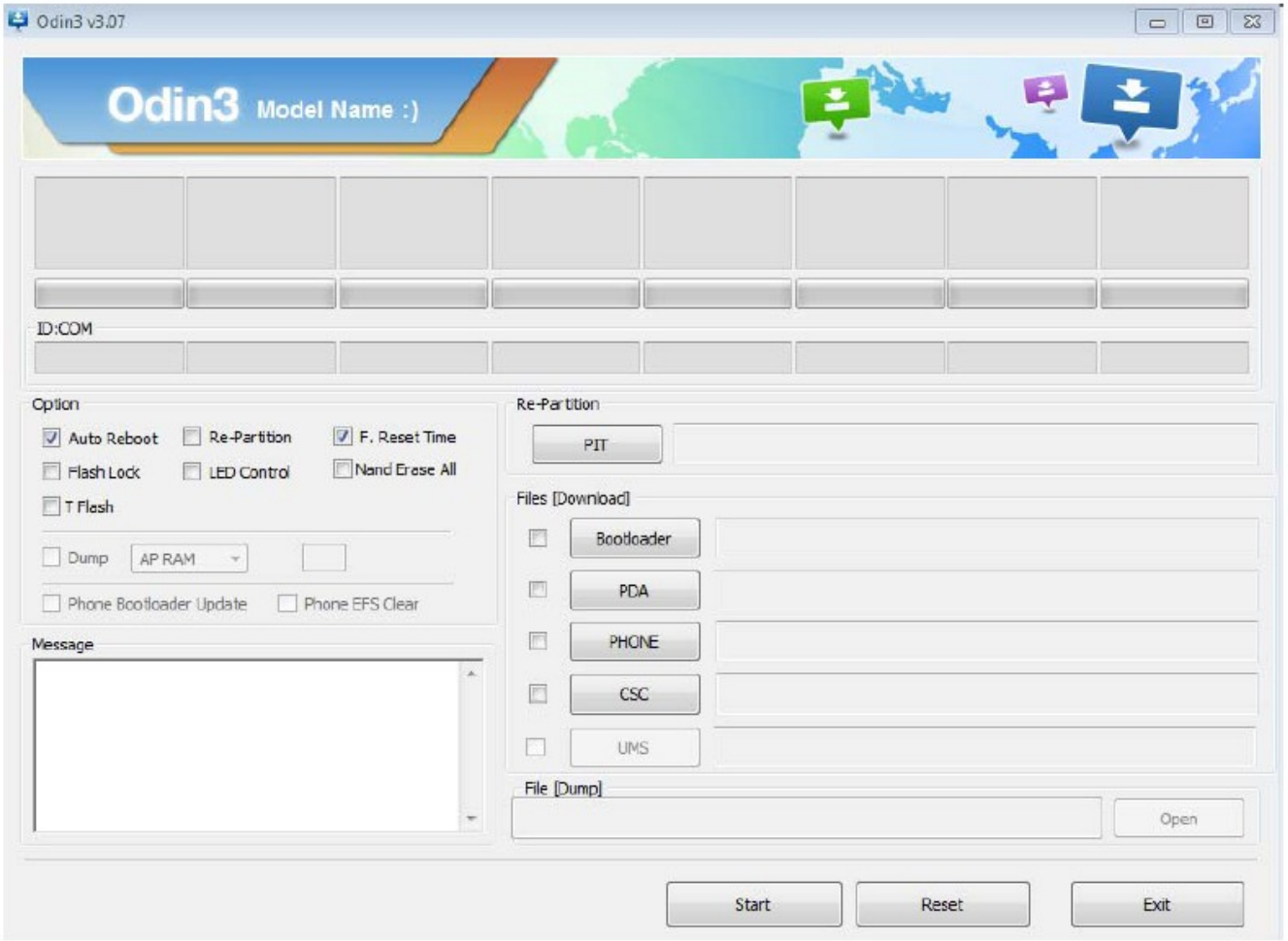
  1) One normal SM-T310(normally booted on)
  2) External SD Card (memory size should be bigger than 2GB)
  3) Odin3 v3.07.exe and Odin3.ini
  4) SM-T310_Boot_Recovery.tar (uploaded on HHPsvc > Find Contents > J-TAG Program > SM-T310)

Boot Recovery (2/10)

- Detailed JTAG Process

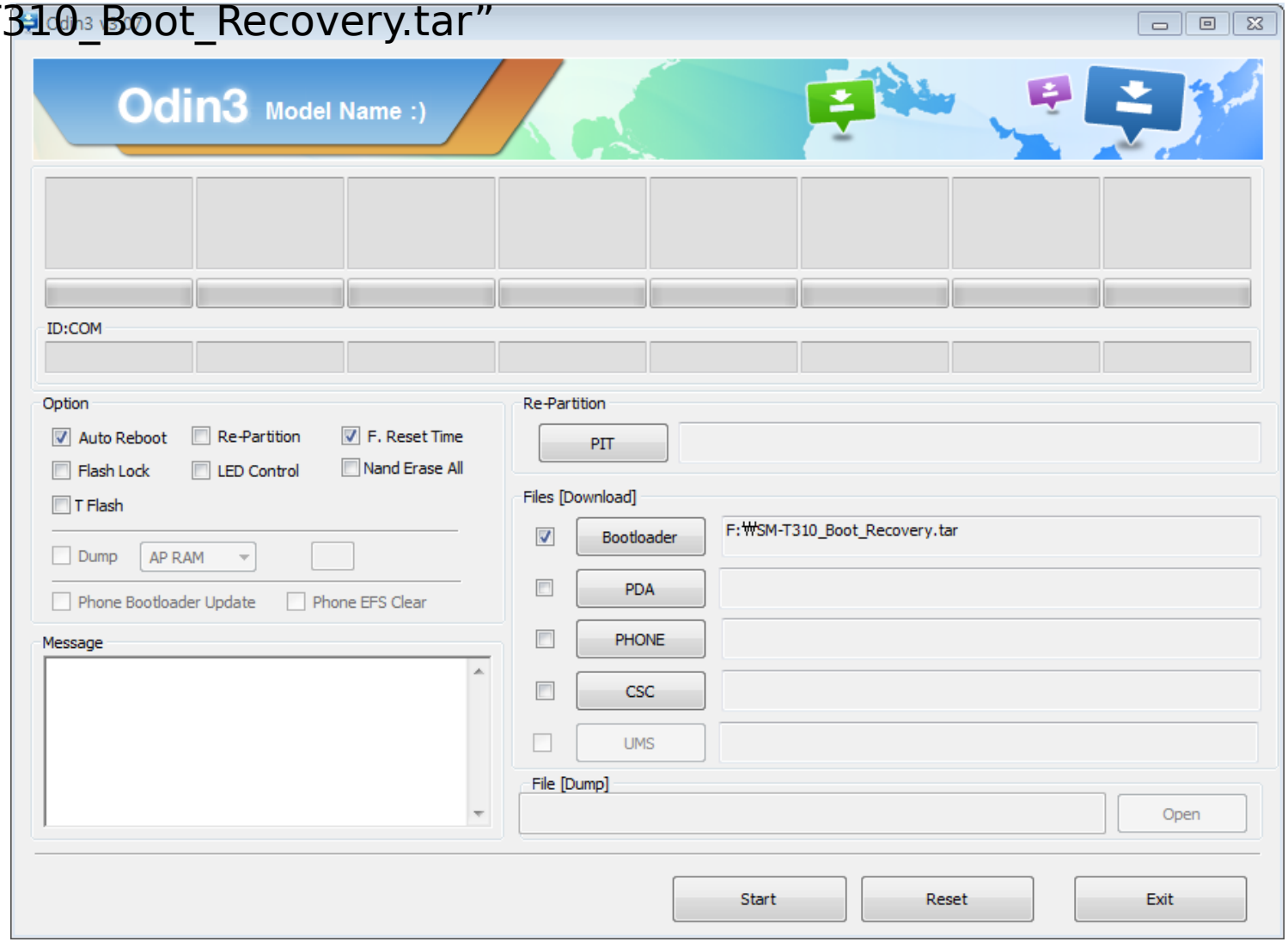
  1) Insert External SD Card to normal phone to copy Bootloader to SD card.

  2) Run Odin3 v3.07.exe



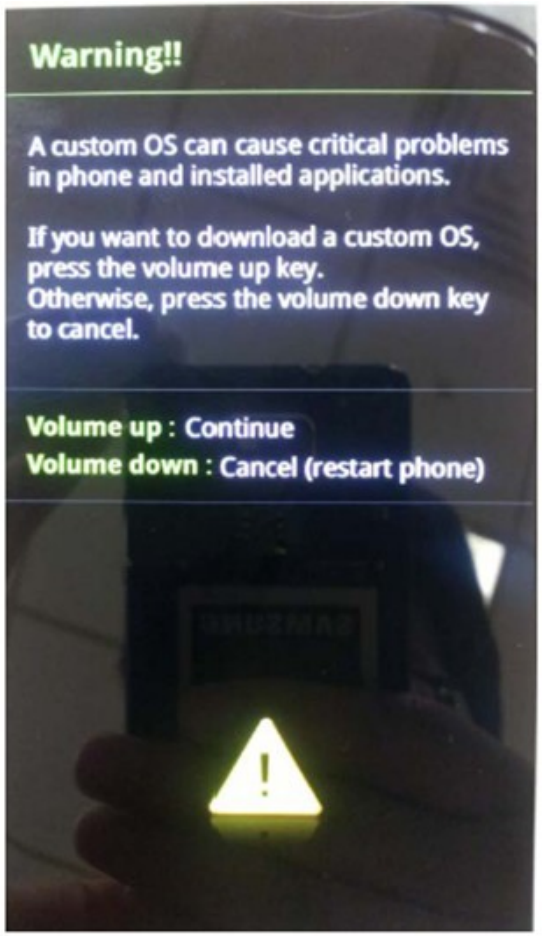
Boot Recovery (3/10)

3) Click ‘Bootloader’ button and load “SM-T310_Boot_Recovery.tar”

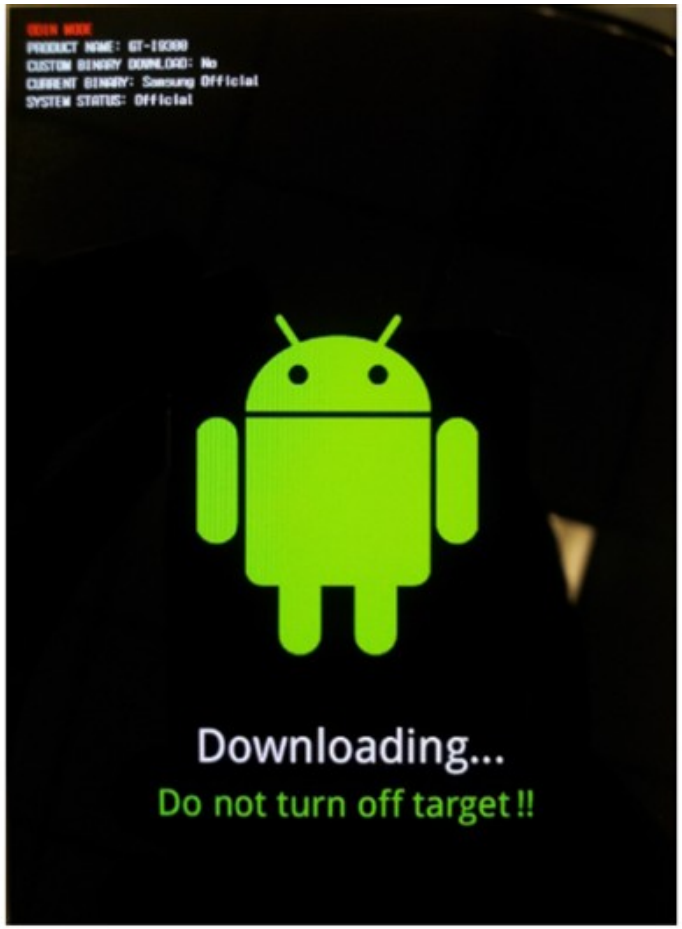


Boot Recovery (4/10)

4) Enter download mode with the normal phone(SD Card inserted).
※ Download Mode : Volume Down Key + Power Key and press Volume Up key.


Warning!!
A custom OS can cause critical problems in phone and installed applications.
If you want to download a custom OS, press the volume up key.
Otherwise, press the volume down key to cancel.
Volume up : Continue
Volume down : Cancel (restart phone)

Volume Up

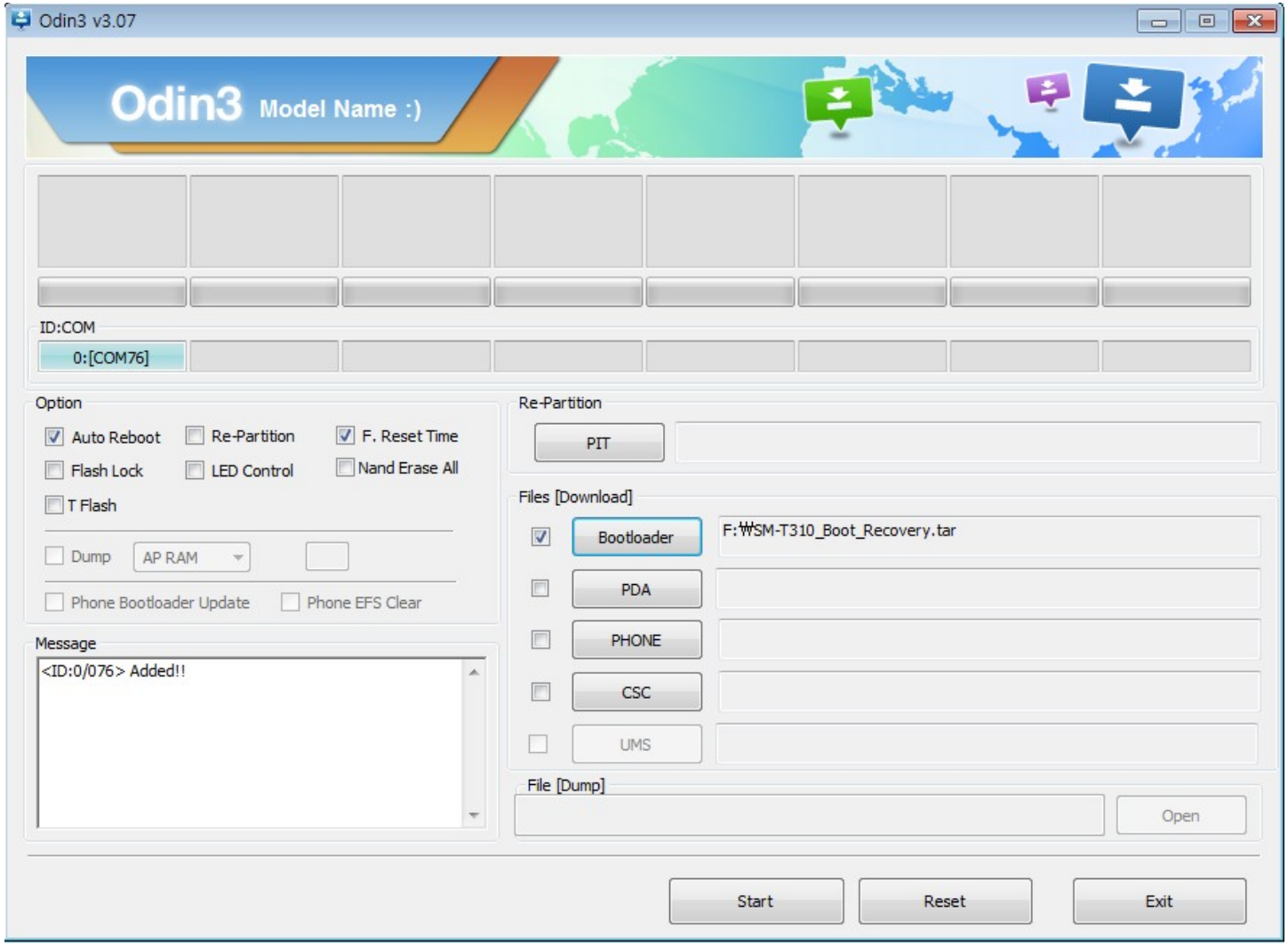


<Volume Down key + Power Key>

<Download Mode>

Boot Recovery (5/10)

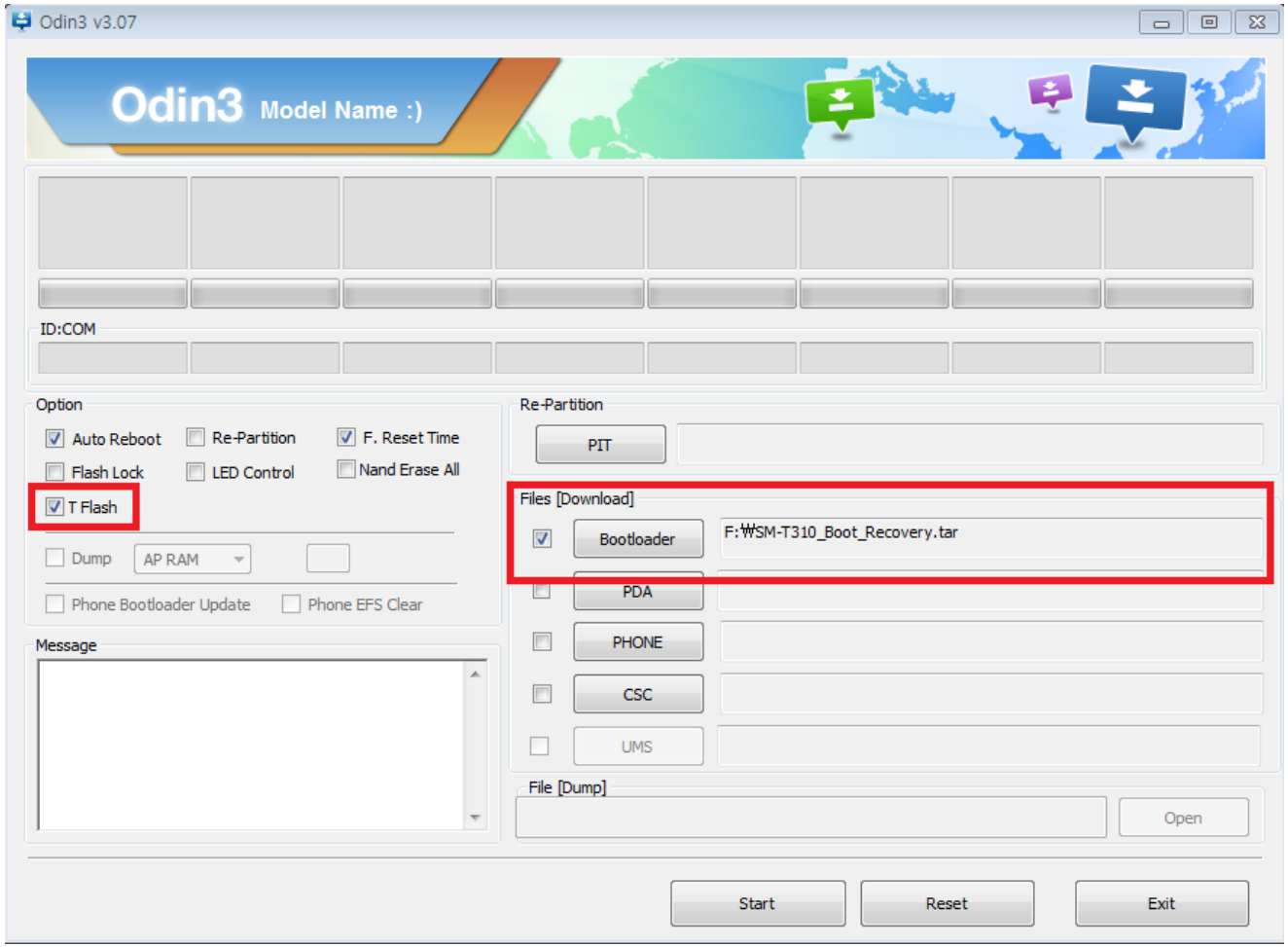
5) Connect the phone to PC, using USB cable.



6) Click Start button to copy bootloader to the phone.

Boot Recovery (6/10)

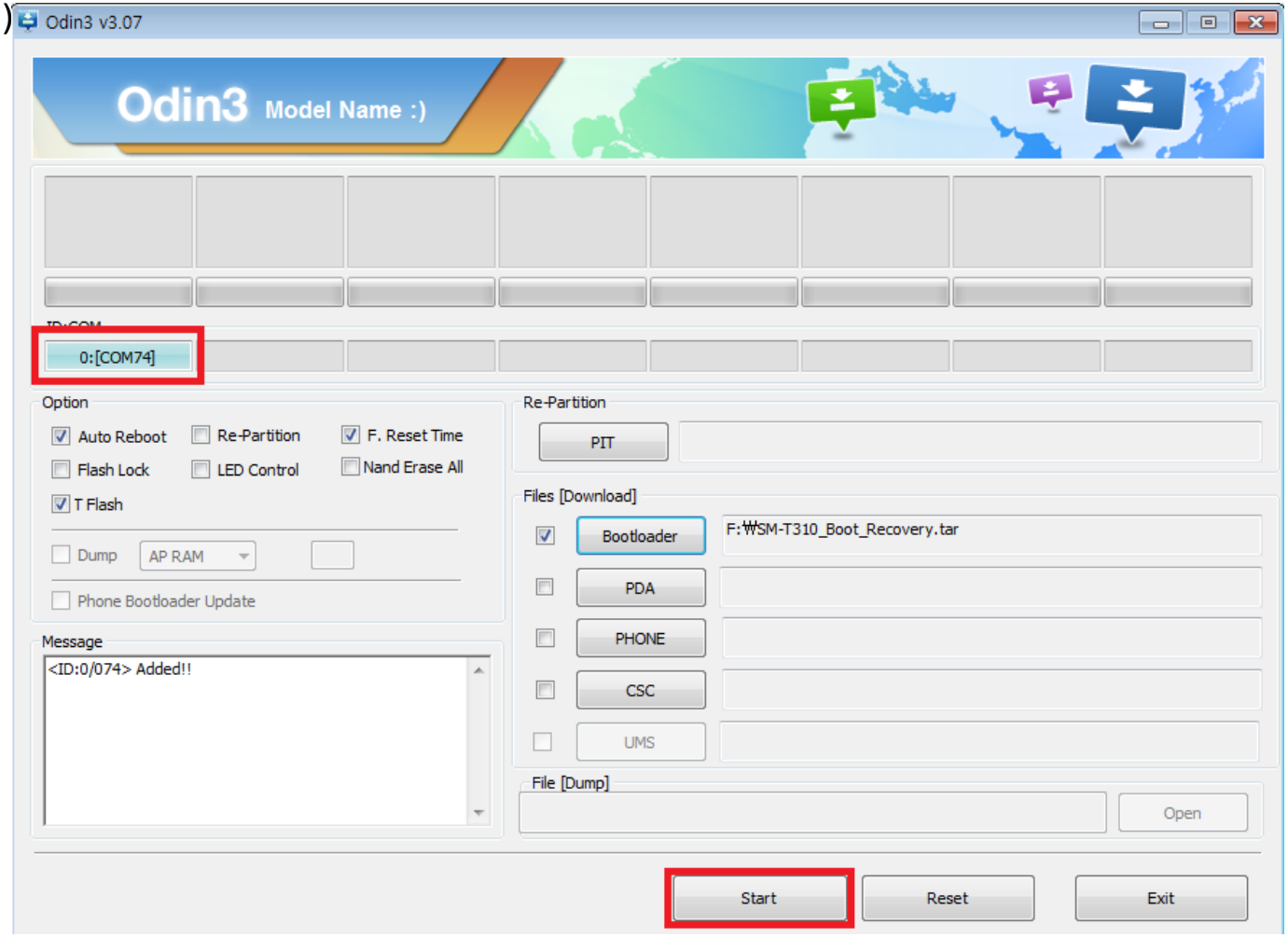
7) Disconnect the phone from PC.
8) Close the Odin3 v3.07.exe and Run it again.
9) Click ‘Bootloader’ button and load “SM-T310_Boot_Recovery.tar”
And check ‘T Flash’ option in the Odin, to copy bootloader to SD Card



Boot Recovery (7/10)

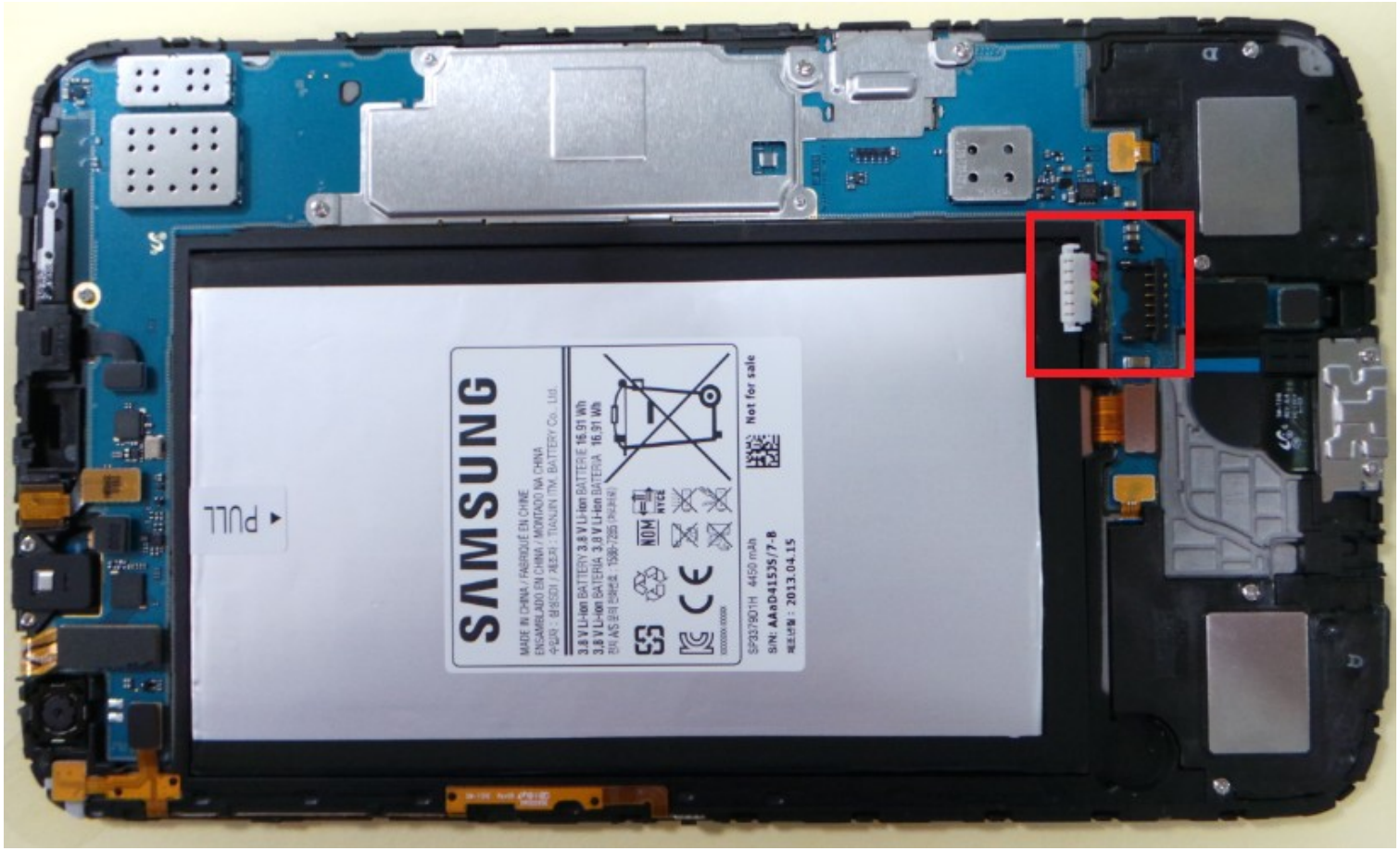
10) Enter download mode with the normal phone(bootloader was copied before),
and connect it to PC again

11)



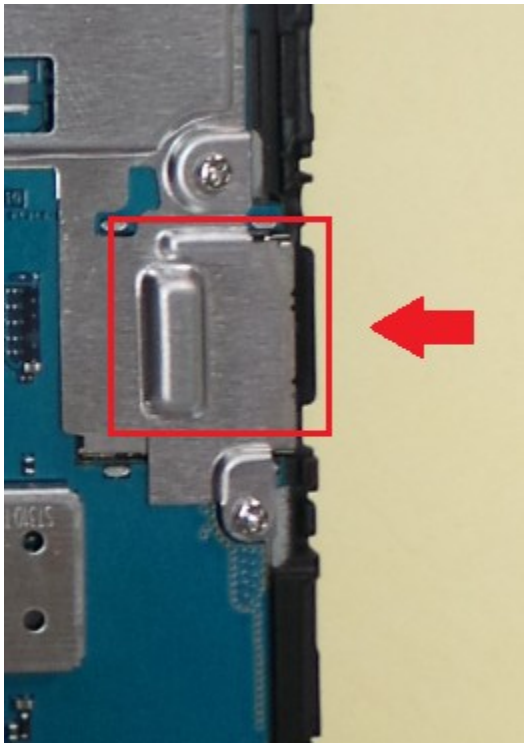
Boot Recovery (8/10)

12) After downloading, turn off the SM-T310 and remove the SD Card.
→ This SD card will be used to recover boot of the phone.
13) Disassemble the ‘Rear case’ from SM-T310, and disconnect battery connector and re-connect battery connector.

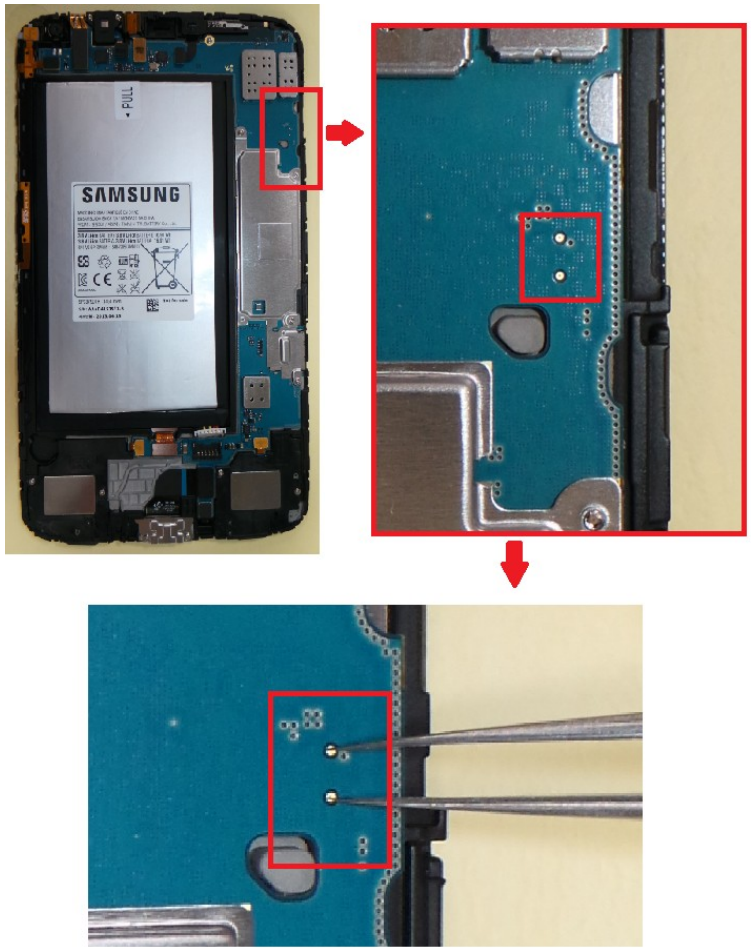


Boot Recovery (9/10)

14) Insert SD card(bootloarder was copied)to the PBA

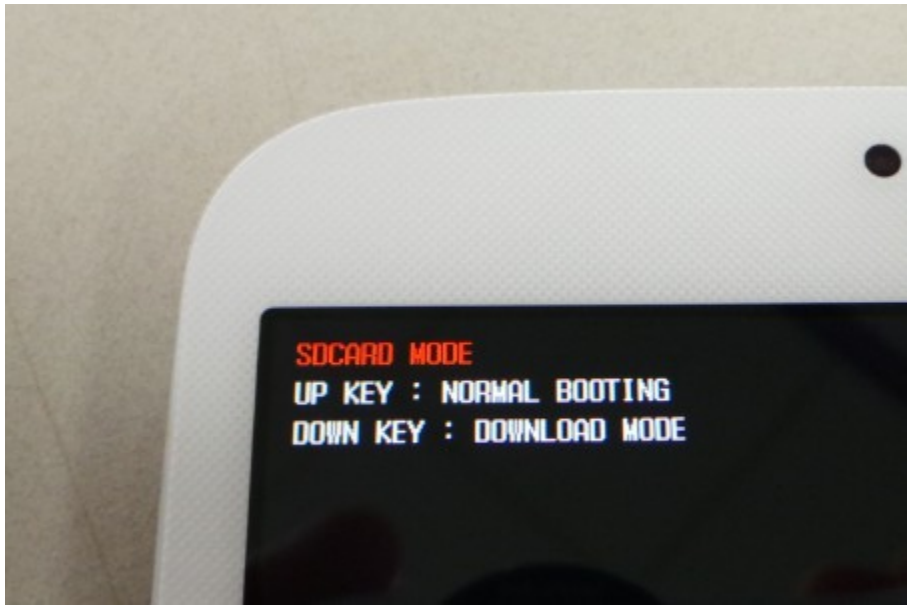


16) Connect two test-point with tweezers.



Boot Recovery (10/10)

17) Turn on the SM-T310 while connect two Test-Point.
And remove tweezers after 5 seconds from turning on the SM-T310.
18) You can see message on the LCD

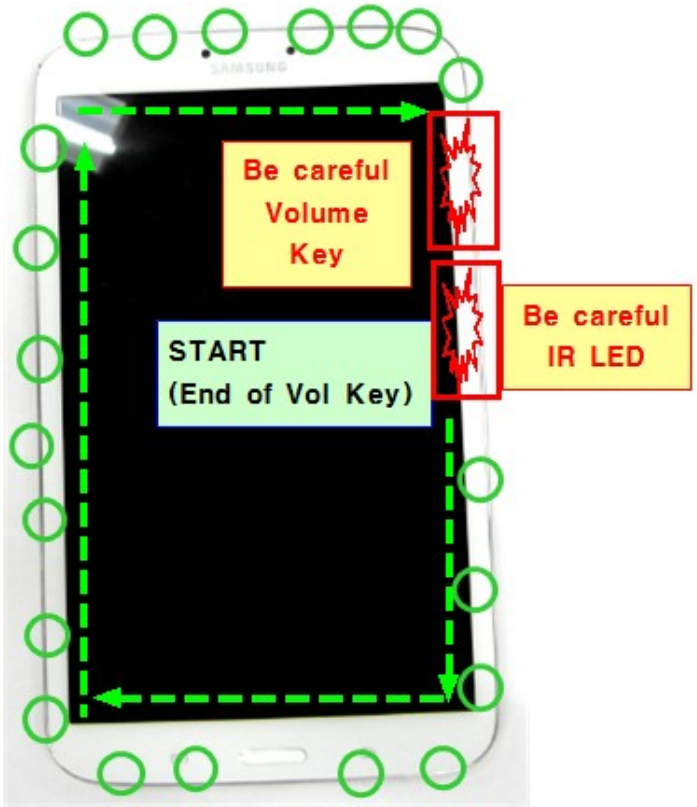


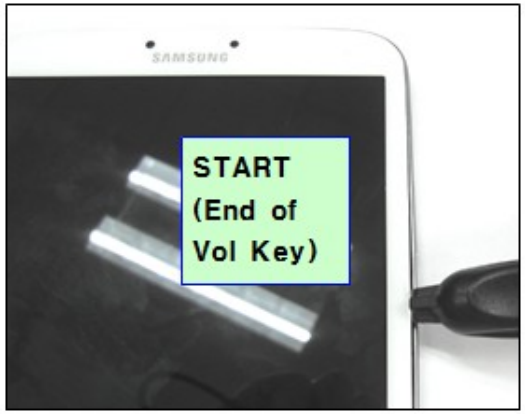
19) Click Volume Down Key to enter Download Mode
20) Download Full S/W including PIT, Bootloader, PDA, CSC

Assembly & Disassembly Instruction

1. Disassembly

1	Disjoint Hook at REAR // Disassemble REAR





1) Be careful not to make scratch and molding damage!	1) Use Band point of disassembly jig

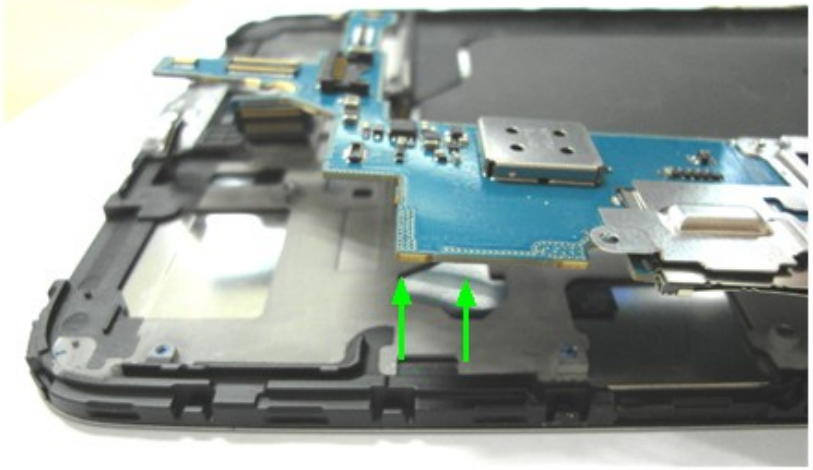
Assembly & Disassembly Instruction

2	Disassemble SCREW

1) Disassemble SCREW(12points)
2) Detach Battery connector

3	Disassemble FPCB

1) Hold up Main PBA from bottom.
2) Be careful not to scratch FPCB

4 Disassemble SPK(L),(R), IF PCB	5 Disassemble PBA
	
	1) Hold up Main PBA from FRONT. 2) Be careful not to scratch FPCB

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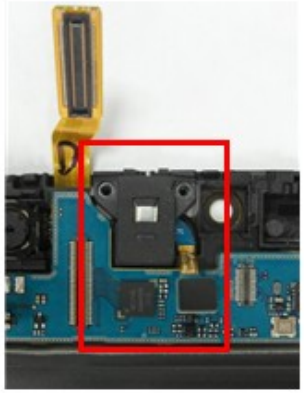
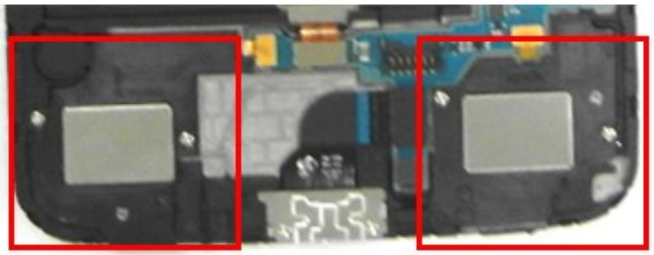
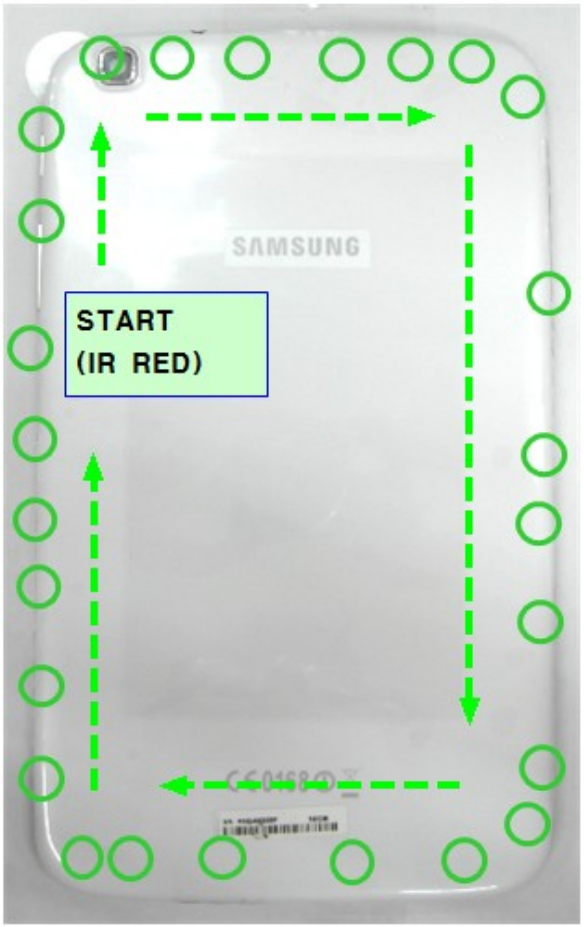
2. Assembly

1 Assemble PBA	2 Assemble IF PCB/SPK on FRONT.
	 
1) Assemble PBA on Front Ass'y	1) Assemble Earjack PCB and SPK on Front.

Assembly & Disassembly Instruction

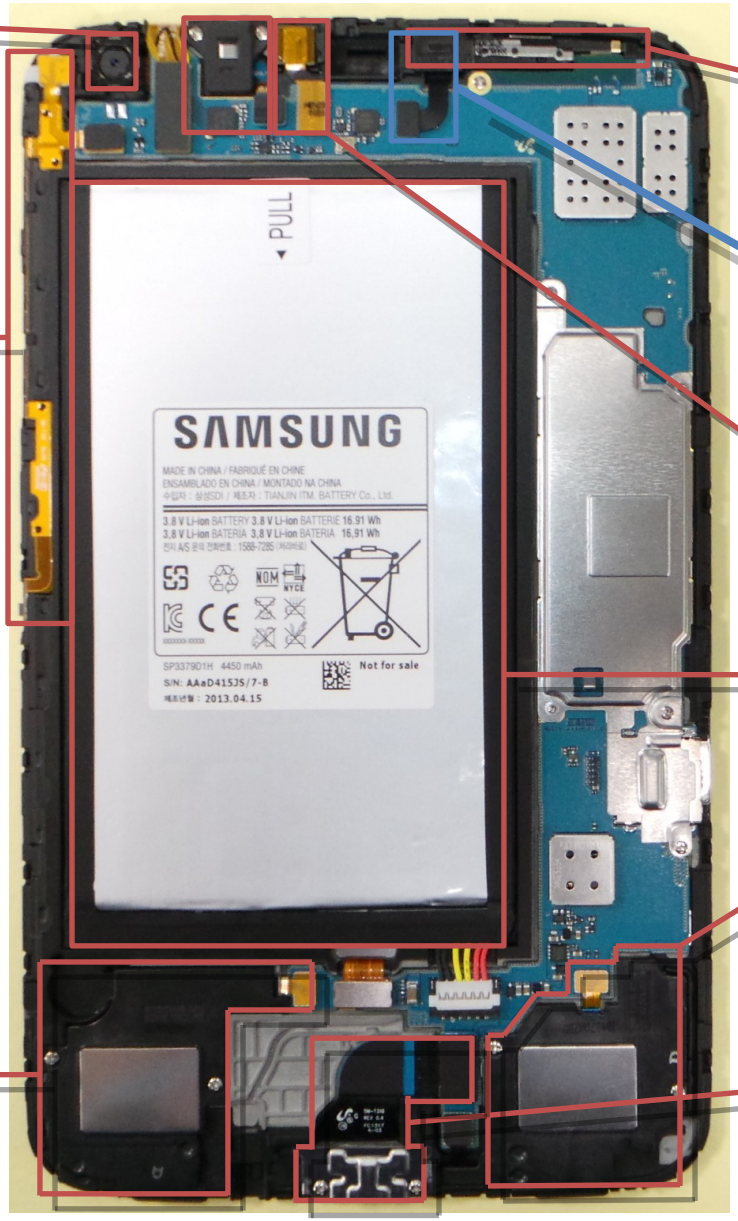
3 Assemble connectors	4 Assemble SCREW
1) Be careful not to scratch FPCB 2) Assemble Battery	1) Drive Screws with torque 1.2 ± 0.1 Kgf/㎠

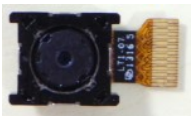
5	Assemble REAR



1) Assemble REAR hook

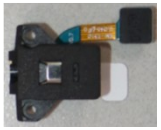
Electronic Components (1/2)





5M CAMERA

GH96-06306A

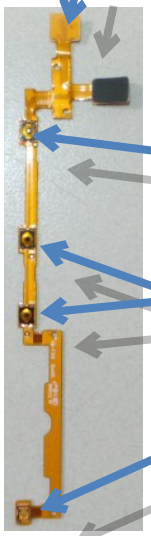


Earjack FPCB

GH59-13405A

MIC

GH59-13346A



Power Key

Volume Key

Ir LED

Right Speaker

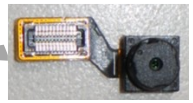
GH96-06319A

Intenna

GH42-04231A

Sensor FPCB

GH59-13424A



1.3M Camera

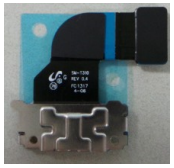
GH96-06290A

Inner Battery

GH43-03857A

Left Speaker

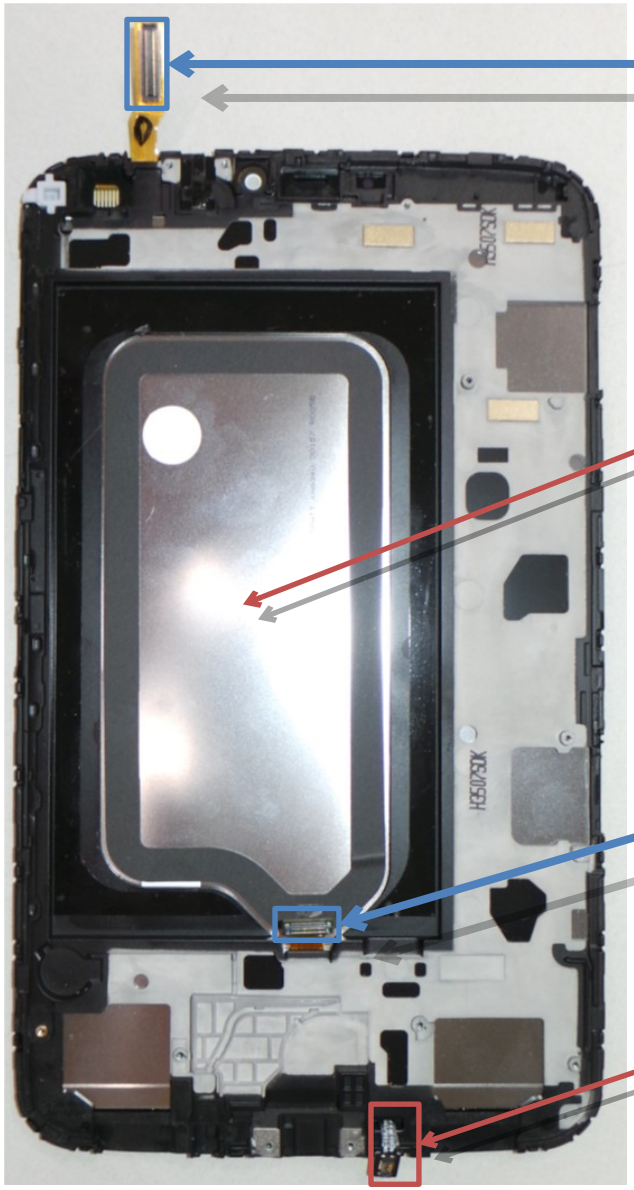
GH96-06317A



USB FPCB

GH59-13370A

Electronic Components (2/2)

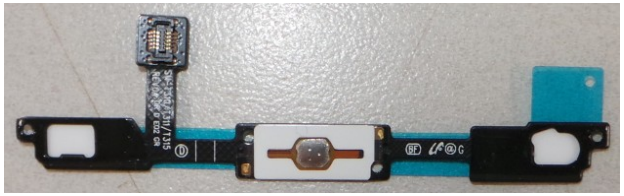


TSP Connector

LCD TSP Assy

GH96-06467A

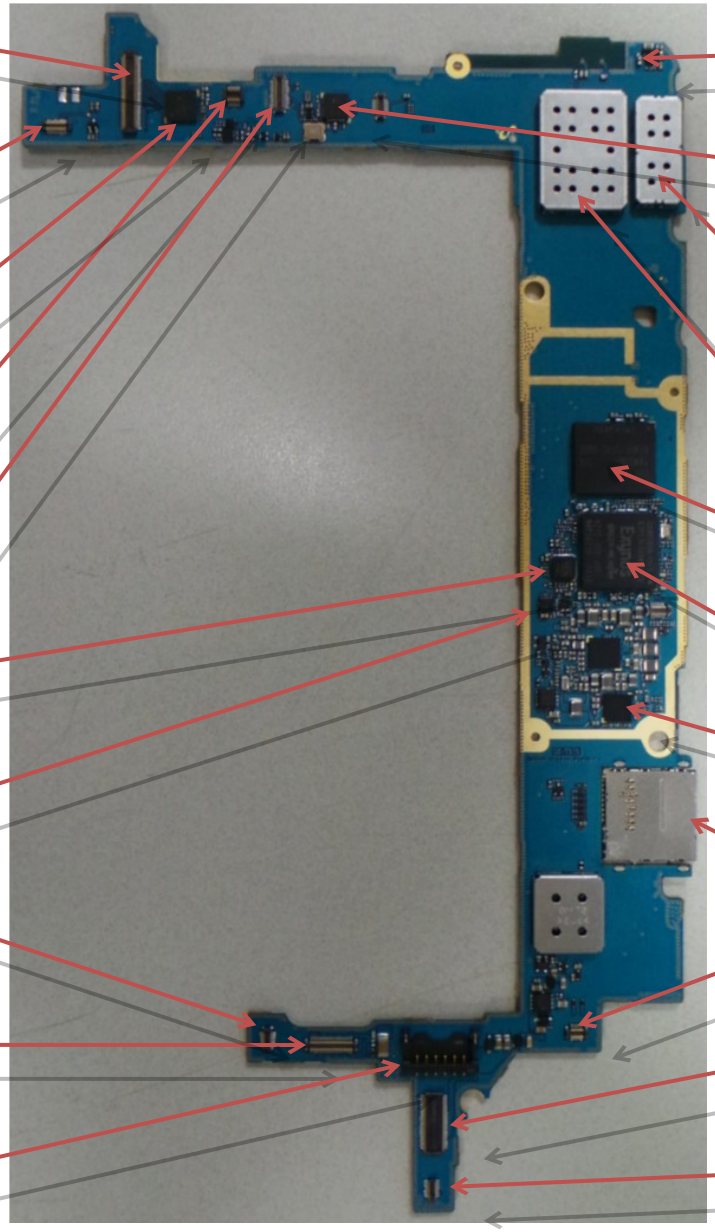
LCD Connector



Home Key FPCB

GH59-13343A

SMD parts (TOP side)



HDC700 3711-008163
TSP Connector

HDC701 3711-008151
KEY IrLED FPCB Connector

U702 1205-004850
TSP IC

HDC202 3711-007738
Earjack FPCB Connector

HDC602 3711-006925
1.3M CAM Connector

U702 1205-004233
MHL IC

U706 1209-002153
Accelerometer IC

HDC201 3711-007172
Right Speaker Connector

HDC601 3711-007295
LCD Connector

BTC500 3711-008421
Battery Connector

U705 1209-002142
Magnetic Sensor IC

U700 1204-003387
IrLED IC

U102 1205-004649
GPS IC (inside of shield-can)

U104 1205-004598
Bluetooth & WIFI IC
(inside of shield-can)

UME400 1107-002239
MoviNAND

UCP400 0902-003010
Application Processor

U502 1203-007321
IF PMIC

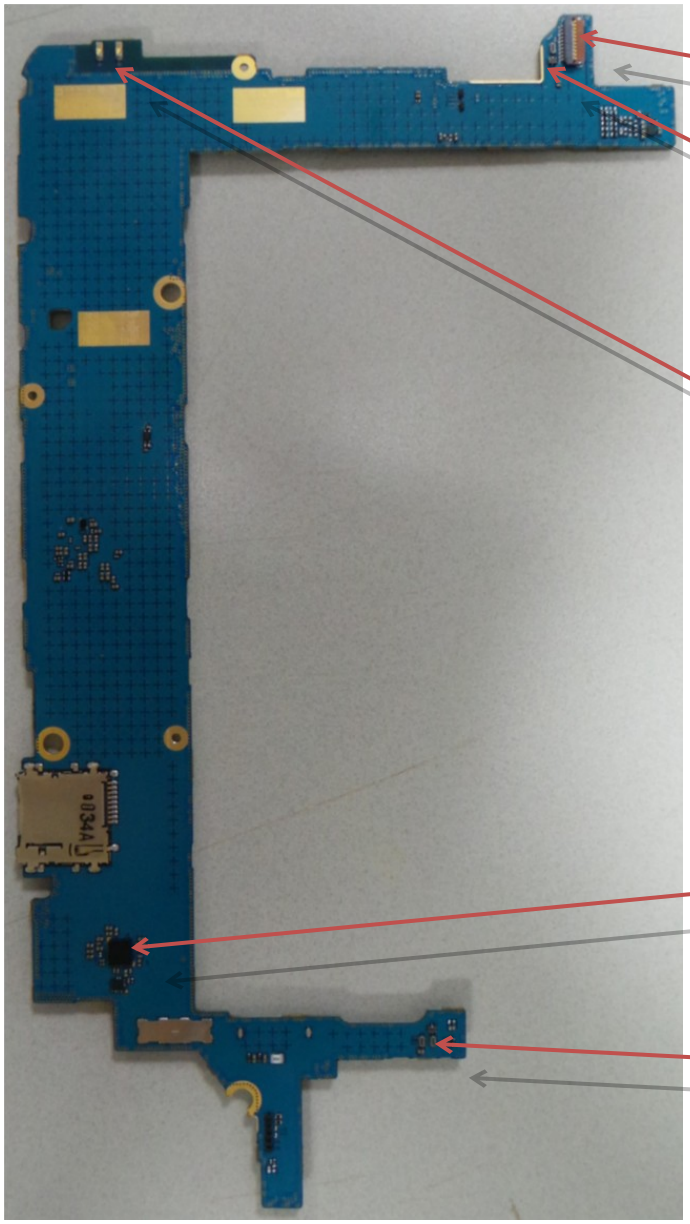
SOC300 3709-001811
SD Card Socket

HDC200 3711-007172
Left Speaker Connector

HDC301 3711-006141
USB FPCB Connector

HDC300 3711-008347
Home Key Connector

SMD parts (Bottom side)



HDC600 3708-002222
5M Camera Connector

F600 2901-001625
F602 2901-001732
Filter for 5M Camera

ANT100, ANT101
3712-001473
Antenna Contact (BT, Wifi, GPS)

U204 1205-004804
Audio Codec

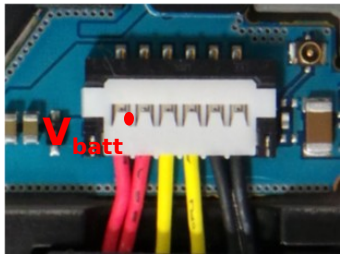
F601 2901-001625
F603, F604 2901-001732
Filter for LCD

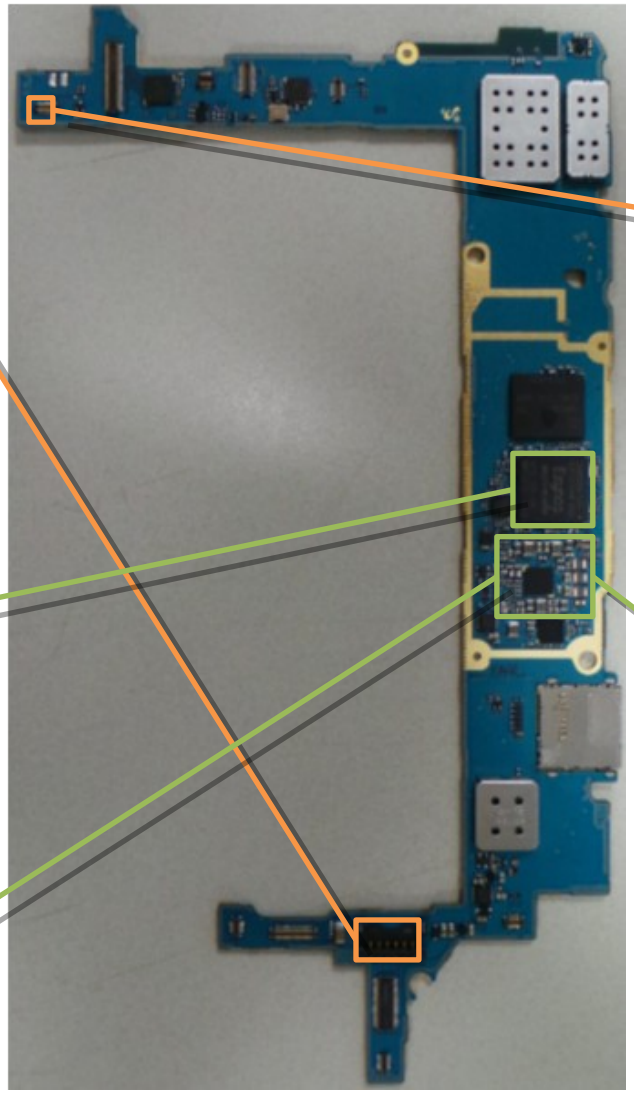
Power problem

Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	Check the battery voltage.	Less than 3.4V	Battery
		More than 3.4V	Go to the next step
3	Check the power-key FPCB.	Abnormal(open, tear, etc)	Power-key FPCB
		Normal	Go to the next step
4	Power on the device and check the power-on sound.	Normal	Front Ass'y
		Abnormal	Go to the next step
5	Check the voltage of the following chips (C524, C522, C521, C532, TP_AP_PS_HOLD)	C524>1.0V, C522>1.0V, C521>1.0V, C532>1.0V TP_AP_PS_HOLD > 1.8V	Go to the next step
		If not the correct value	PMIC (U500)
6	Check the frequency of OSC500(C513)	32KHz	Main chip (UCP400)
		If not the correct value	TCXO (OSC500)

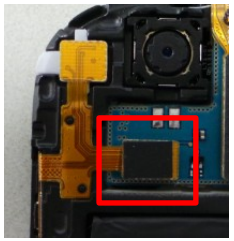
Power problem

Step2



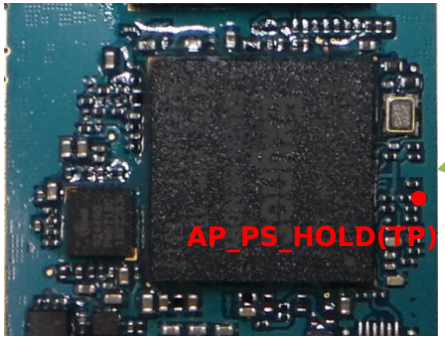


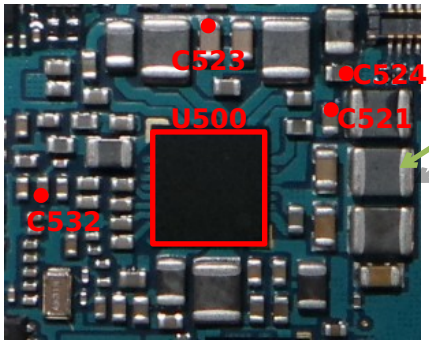
Step3



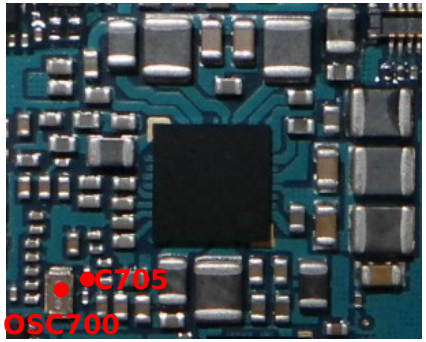
Check the power-key FPCB

Step5





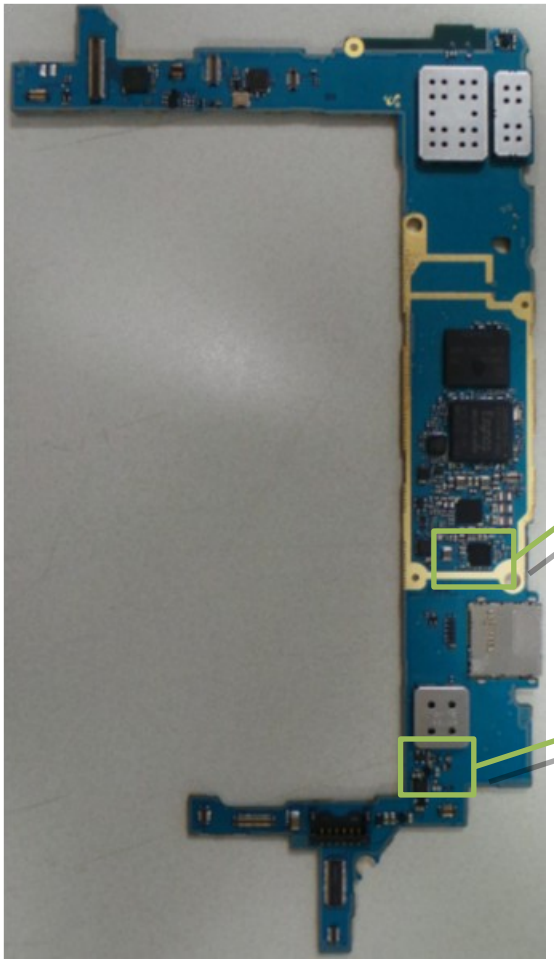
Step6



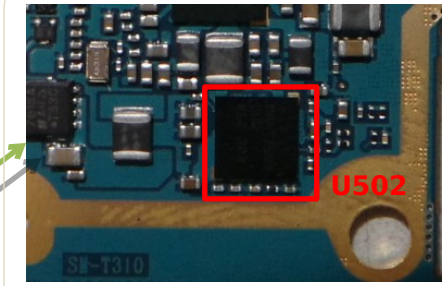
Charging

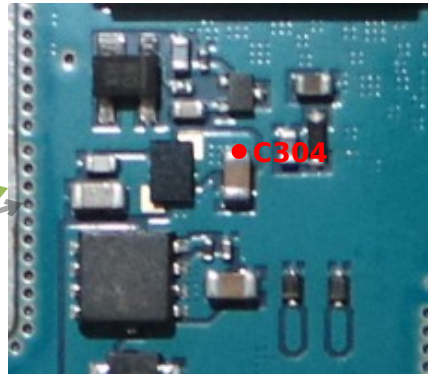
Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	Check the voltage of V_BUS(C304).	C304 = 5V	Go to the next step
		If not the correct value	Connection status of USB FPCB or U300.
3	Check the charging operating of battery.	Abnormal	IF PMIC(U502)
		Normal	-

Charging



Step2, 3





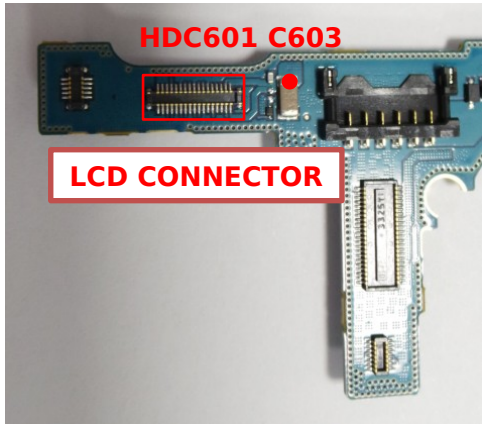
Display problem

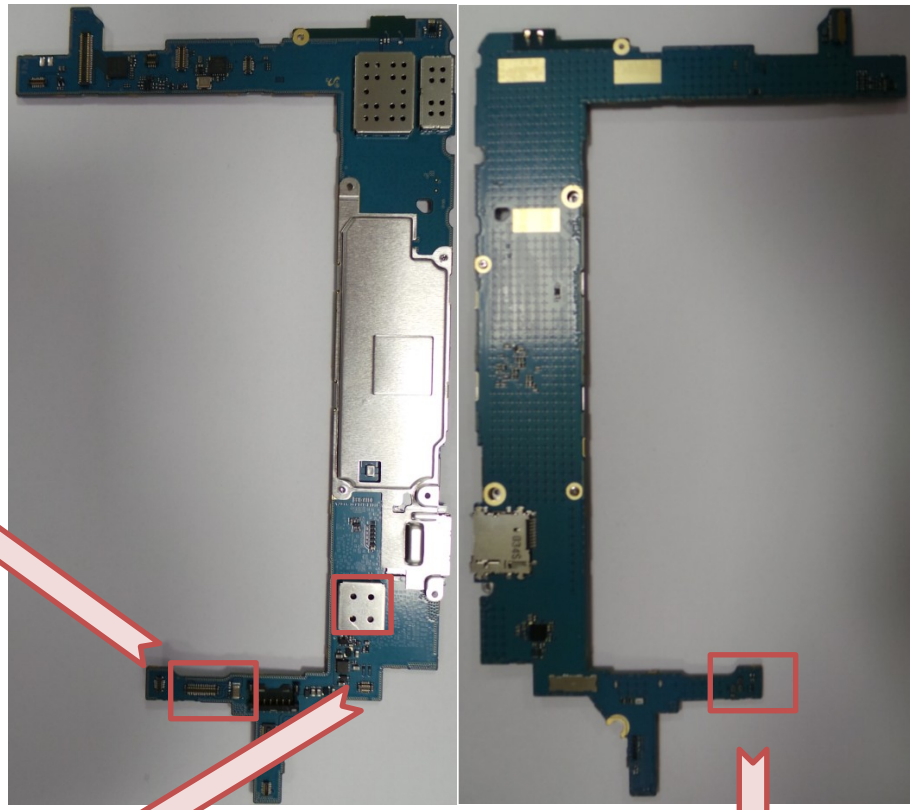
Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	Check the LCD connector (HDC702)	Broken, dust, corrosion Insert status	AMOLED connector (HDC702)
		Normal	Go to the next step
3	Replace the TFT LCD	Solved	TFT LCD
		Not solved	Go to the next step
4	Connect a LCD and display on with a power supply (power supply voltage : 4.0V)	-	-
5	Check the voltage of C603 = 19V +/- 1V Notice. It should be measured when the display is activated on	If not the correct value	U602
		C603 = 19V +/- 1V	Go to the next step
6	Check the voltage of C605 = 3.3V Notice. It should be measured when the display is activated on	If not the correct value	U600
		C605=3.3V	Go to the next step
7	Check the voltage of C606 = 1.8V Notice. It should be measured when the display is activated on	If not the correct value	PMIC
		C606 = 1.8V	Go to the next step
8	Check the **Signal** of following chips (F601, F603, F604) Notice. It should be measured when the display is activated on	If not the correct value	F601, F603, F604
		Same signal compared with a good PBA	MAIN CHIP or PBA

Display problem

Step2

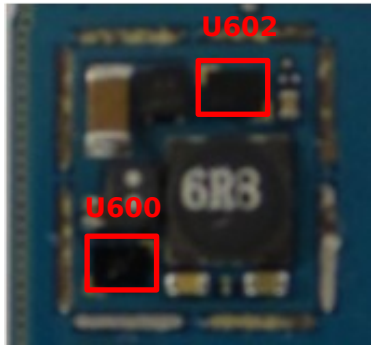
Step5





Step5

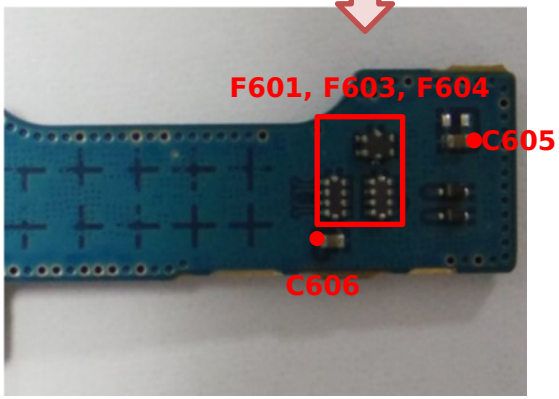
Step6



Step6

Step7

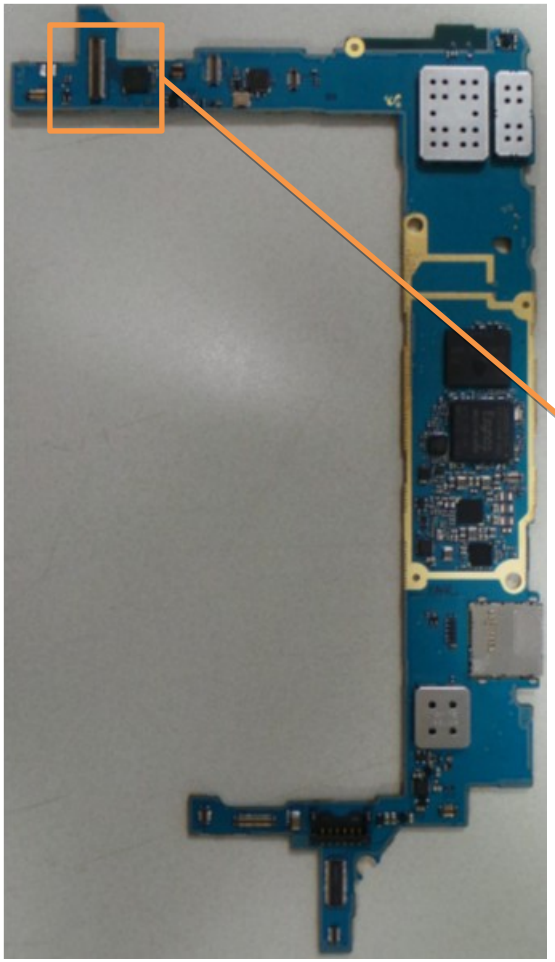
Step8

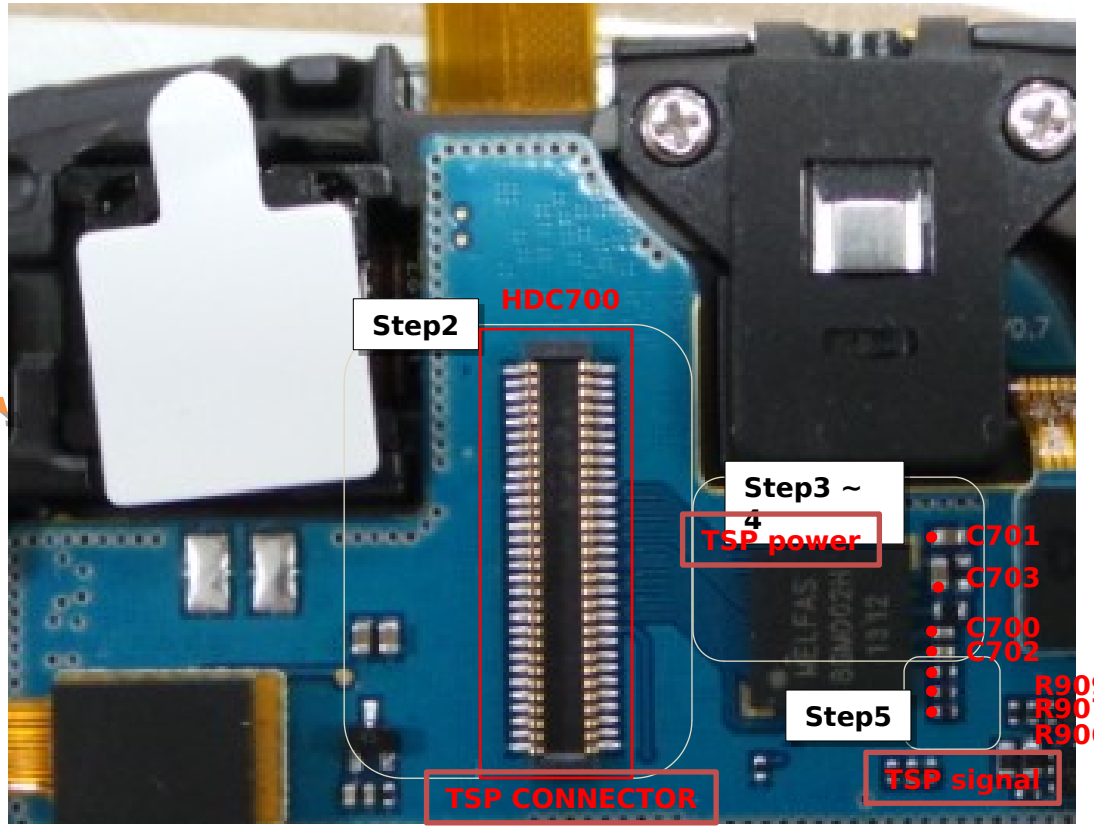


Touch problem

Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	Check the TSP connector (HDC700)	Broken, dust, corrosion	TSP connector (HDC700)
		Normal	Go to the next step
3	Check the voltage of C703 Notice. It should be measured when the display is activated on	If not the correct value	PMIC(U500)
		C703 = 3.3V	Go to the next step
4	Check the voltage of following chips (C700,C701,C702) Notice. It should be measured when the display is activated on	If not the correct value	Touch IC(U701)
		C700,C701 = 1.8V C702 = 5.0V	Go to the next step
5	Check the **Signal** of following chips (R706,R707,R709) Notice. It should be measured when the display is activated on	If not the correct value	R706,R707,R709
		Same signal compared with a good PBA	Go to the next step
6	Replace the TSP	Solved	TSP
		Not solved	Main chip or PBA

TSP problem

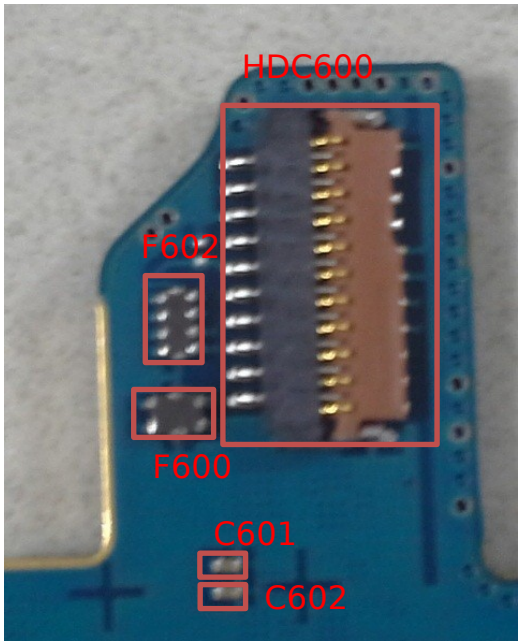


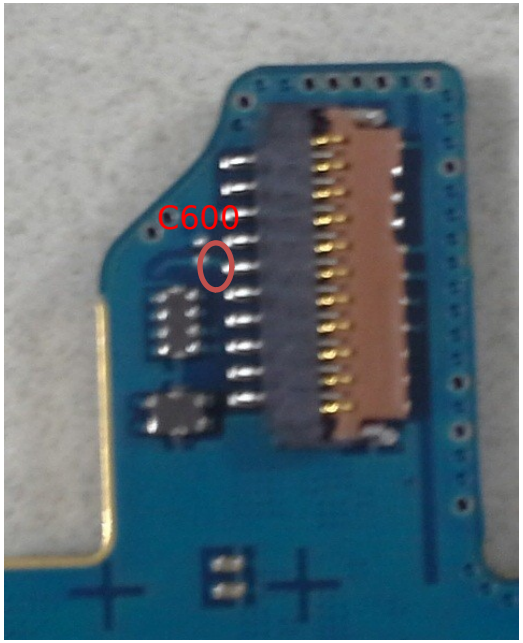

Step2
HDC700
Step3 ~ 4
TSP power
C701
C703
C700
C702
R909
R907
R906
Step5
TSP signal
TSP CONNECTOR

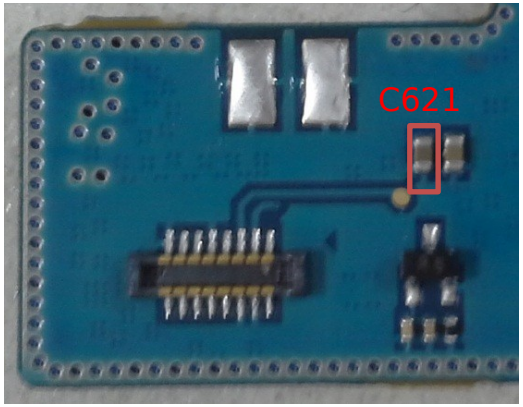
5M CAM Problem

Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	Check the 5M CAM connector (HDC900)	Broken, dust, corrosion	5M CAM connector (HDC600)
		Normal	Go to the next step
3	Check the voltage of following chips (C601, C602, C621) Notice. It should be measured when the 5M CAM is activated on	If not the correct value	C601, C602, C629, C630
		C601 = 1.2V, C602 = 1.8V, C621 = 2.8V	Go to the next step
4	Check the clock of C600 Notice. It should be measured when the 5M CAM is activated on	C600 = 12Mhz (Same signal compared with a good PBA)	Go to the next step
		If not the correct value	Main chip
5	Check the F600, F602 Notice. It should be measured when the 5M CAM is activated on	Abnormal	F600, F602
		Normal	Go to the next step
6	Replace the 5M CAM	Solved	5M CAM
		Not solved	Main chip or PBA

5M CAM Problem



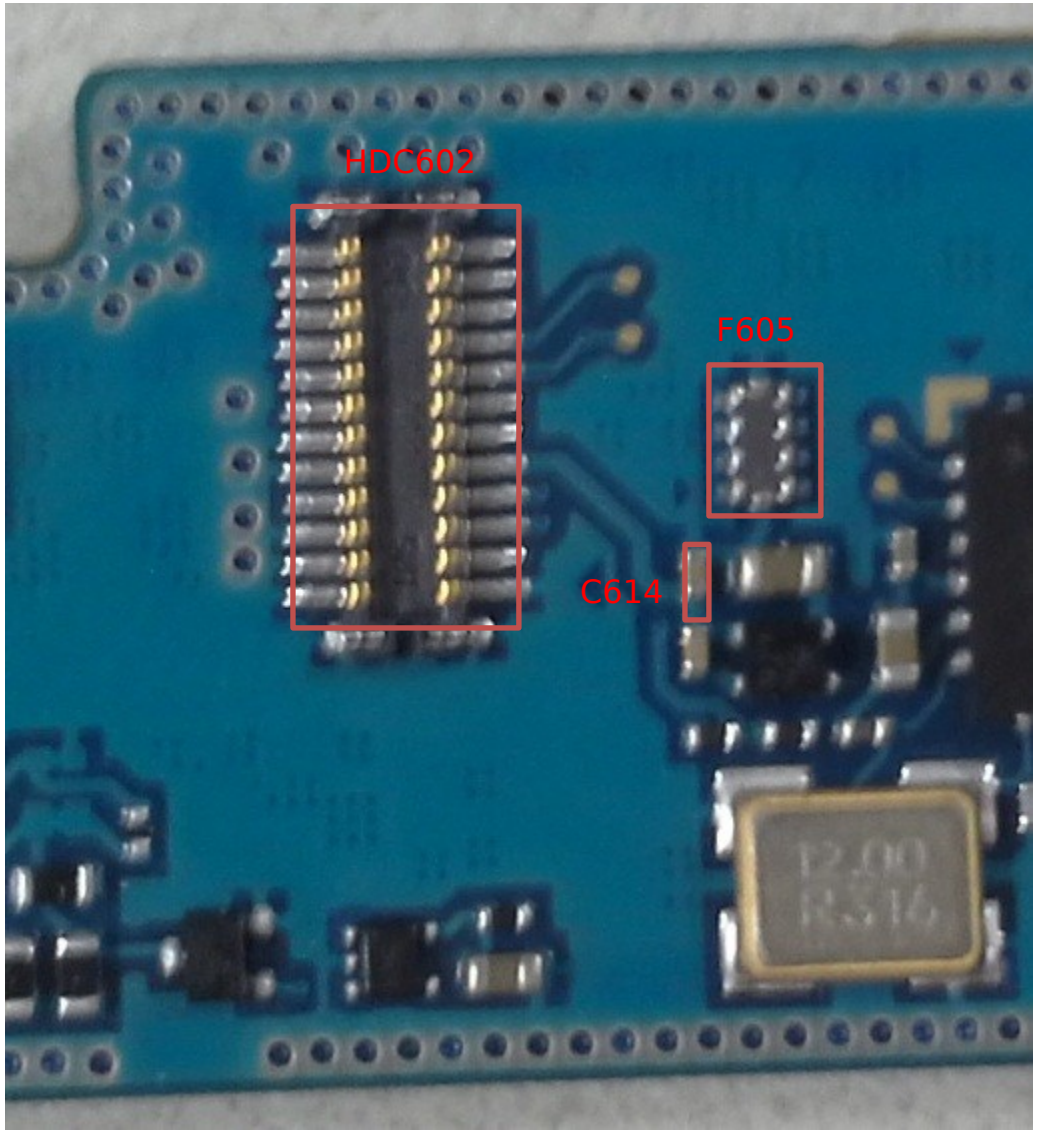


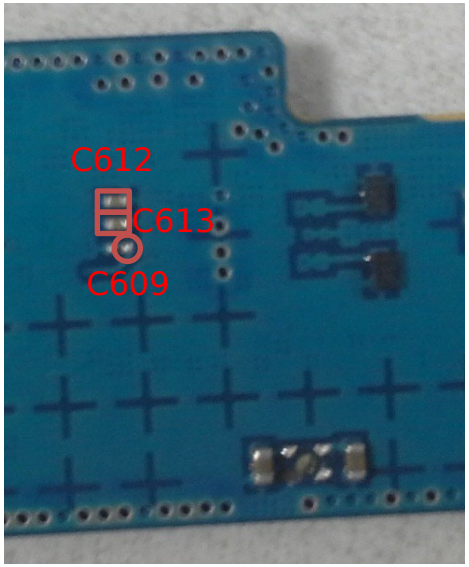


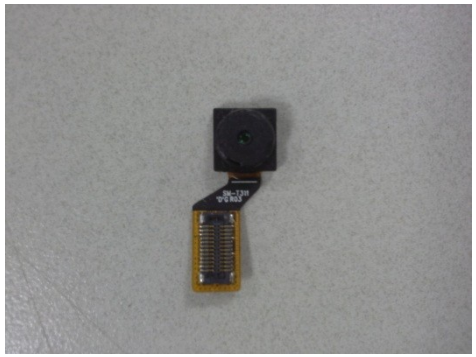
1.3M CAM Problem

Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	Check the 1.3M CAM connector (HDC602)	Broken, dust, corrosion	1.3M CAM connector (HDC602)
		Normal	Go to the next step
3	Check the voltage of following chips (C612, C613, C614) Notice. It should be measured when the 1.3M CAM is activated on	If not the correct value	C612, C613, C614
		C612 = 1.8V, C613 = 1.8V, C614 = 2.8V	Go to the next step
4	Check the clock of C609 Notice. It should be measured when the 1.3M CAM is activated on	C609 = 24Mhz (Same signal compared with a good PBA)	Go to the next step
		If not the correct value	Main chip
5	Check the F605 Notice. It should be measured when the 1.3M CAM is activated on	Abnormal	F902
		Normal	Go to the next step
6	Replace the 1.3M CAM	Solved	1.3M CAM
		Not solved	Main chip or PBA

1.3M CAM Problem





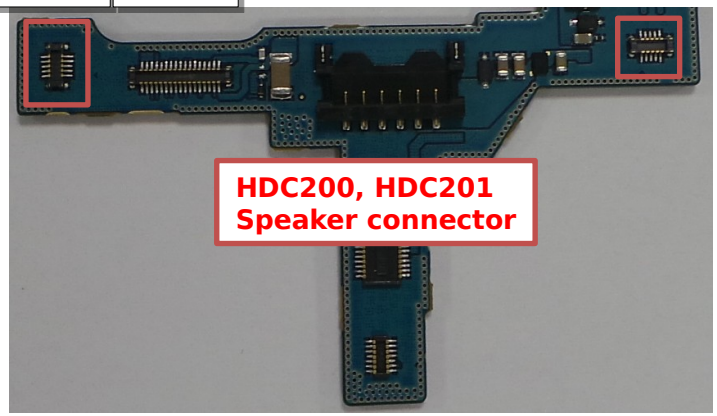


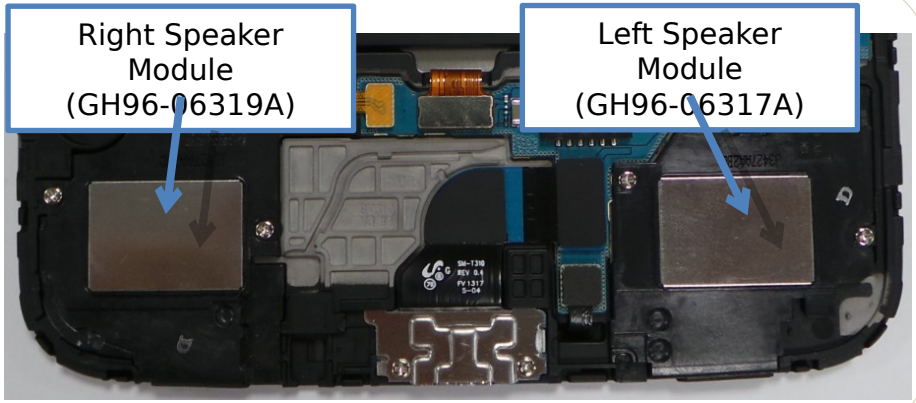
Speaker problem

Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	Make a factory reset (*2767*3855#)	Solved	Setting error
		Not solved	Go to the next step
3	Check the speaker connector (Left: HDC200, Right: HDC201)	Broken, dust, corrosion	Speaker connector
		Normal	Go to the next step
4	Replace the speaker module (Left: GH96-06317A, Right:GH96-06319A)	Solved	speaker
		Not solved	Go to the next step
5	Connect a LCD, and power on with a power supply (power supply voltage : 3.8V)	-	-
6	Activate the speaker path (*#0*# → Speaker)	-	-
7	Check the signal of speaker contact (HDC200, HDC201) Notice. It should be measured when the speaker path is activated on	Same signal compared with a good PBA	Speaker Connector (HDC200, HDC201)
		Normal Voltage and No signal	Audio Codec (U204)

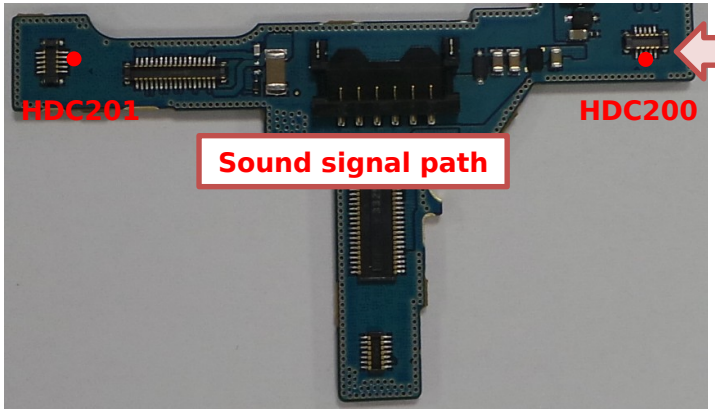
Speaker problem

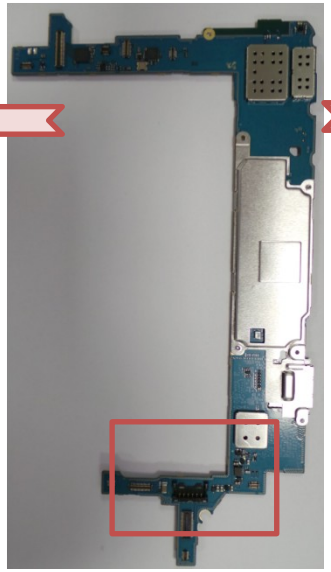
Step3 Step4

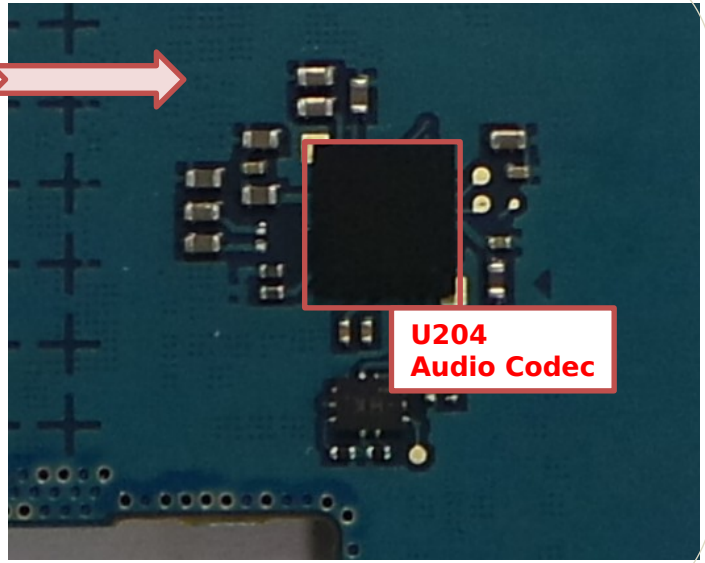




Step7





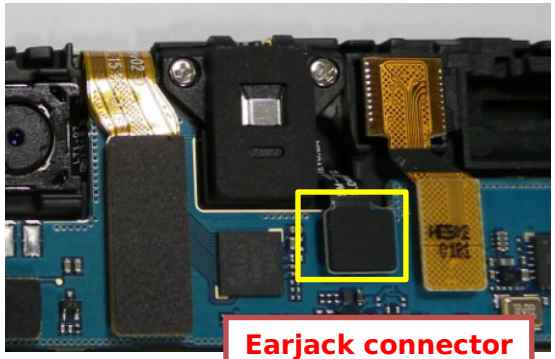


Earphone problem

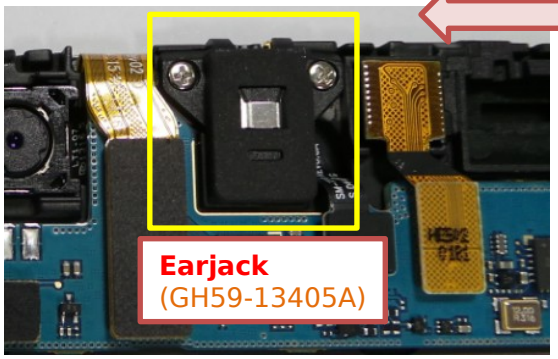
Step	Check point	Result value	Defect point
1	Confirm the defect symptom (*#0*# → Receiver)	-	-
2	Make a factory reset (*2767*3855#)	Solved	Setting error
		Not solved	Go to the next step
3	Check the Earphone connector(HDC202)	Broken, dust, corrosion	connector
		Normal	Go to the next step
4	Replace the Earjack module (GH59-13405A)	Solved	Earjack
		Not solved	Go to the next step
5	Connect a LCD, and power on with a power supply (power supply voltage : 3.8V)	-	-
6	Activate the Speaker path (*#0*# → Speaker(L), Speaker(R))	-	-
7	Check the signal of D204, D207 Notice. It should be measured when the Earphone path is activated on	Same signal compared with a good PBA	Earphone
		No signal	Audio codec (U204)

Earphone problem

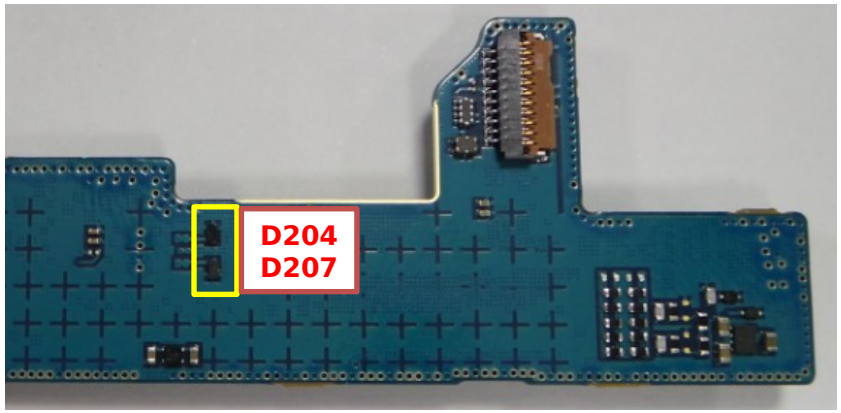
Step3



Step4



Step7

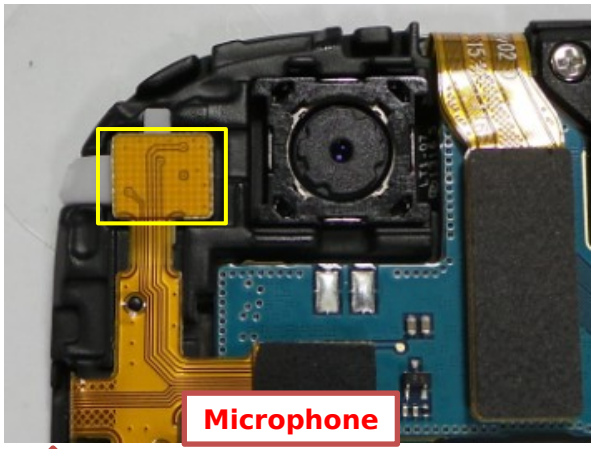


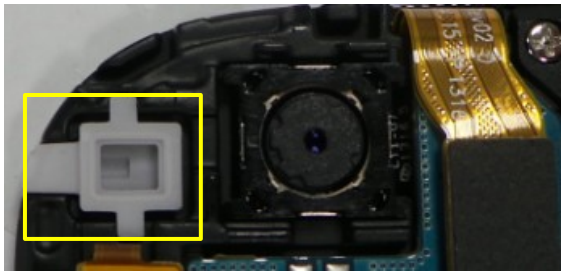
Microphone problem

Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	Check the microphone hole	Dust	Clean the hole
		Normal	Go to the next step
3	Check the microphone rubber	Wrong insert	Re-insert
		Normal	Go to the next step
4	Activate the speaker path (*#0283# → Packet Loopback ON)	-	-
5	Check the MIC connector (HDC701)	Broken, dust, corrosion	MIC connector
		Normal	Go to the next step
6	Check the signal of TP_704 Notice. It should be measured when the microphone path is activated on	Same signal compared with a good PBA	Microphone
		If not the correct value	AUDIO CODEC(U204)
7	Check the signal of C204, C215 Notice. It should be measured when the microphone path is activated on	Same signal compared with a good PBA	Microphone
		If not the correct value	AUDIO CODEC(U204)

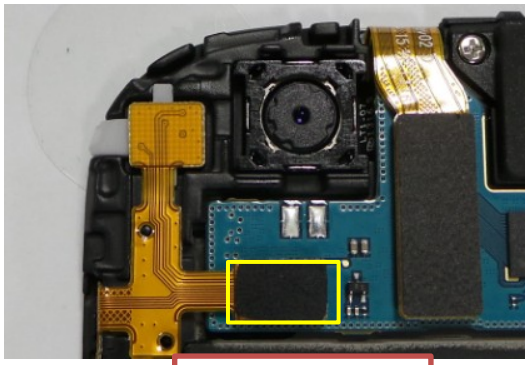
Microphone problem

Step2,3

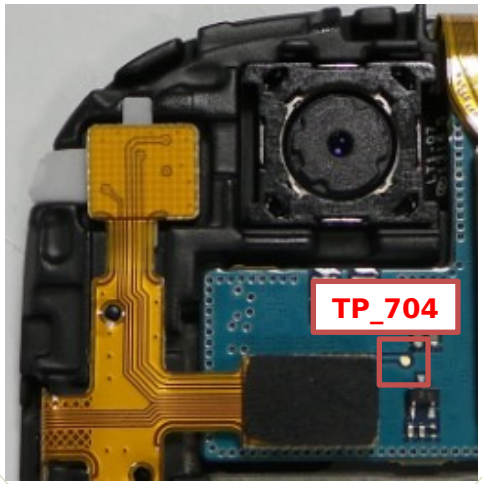




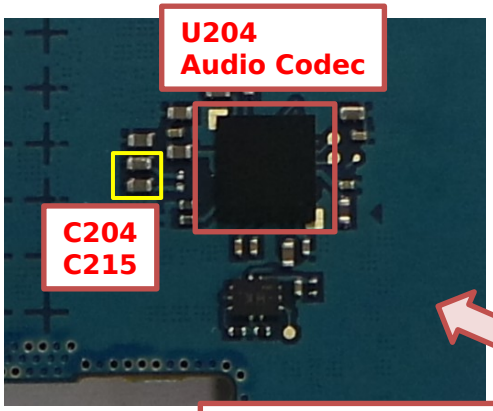
Step5

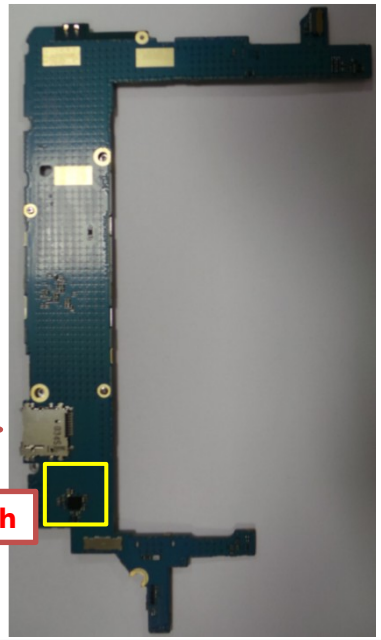


Step6



Step7





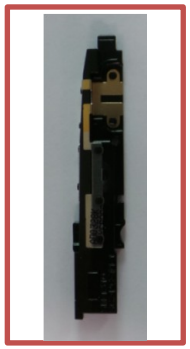
BT/WIFI Problem

Step	Check point	Result value	Defect point
1	Confirm the defect symptom (Check the turned on BT/WIFI & connected device)	Turned on	Go to the next step
		Turned off	Turn on
2	Check the BT/WIFI Ant. & Ant contact. (Ant. & ANT100,ANT101)	Broken, dust, corrosion	Ant & ANT100, ANT101
		Normal	Go to the next step
3	Check the voltage of C135 Notice. It should be measured when the BT/ WIFI path is activated on	C135 = 1.8V	Go to the next step
		If not the correct value	PMIC (U500)
4	Check the clock of R120, C150, C151 Notice. It should be measured when the BT/ WIFI path is activated on	R120 = 37Mhz (Same signal compared with a good PBA)	BT/WIFI IC (U104)
		If not the correct value	OSC101

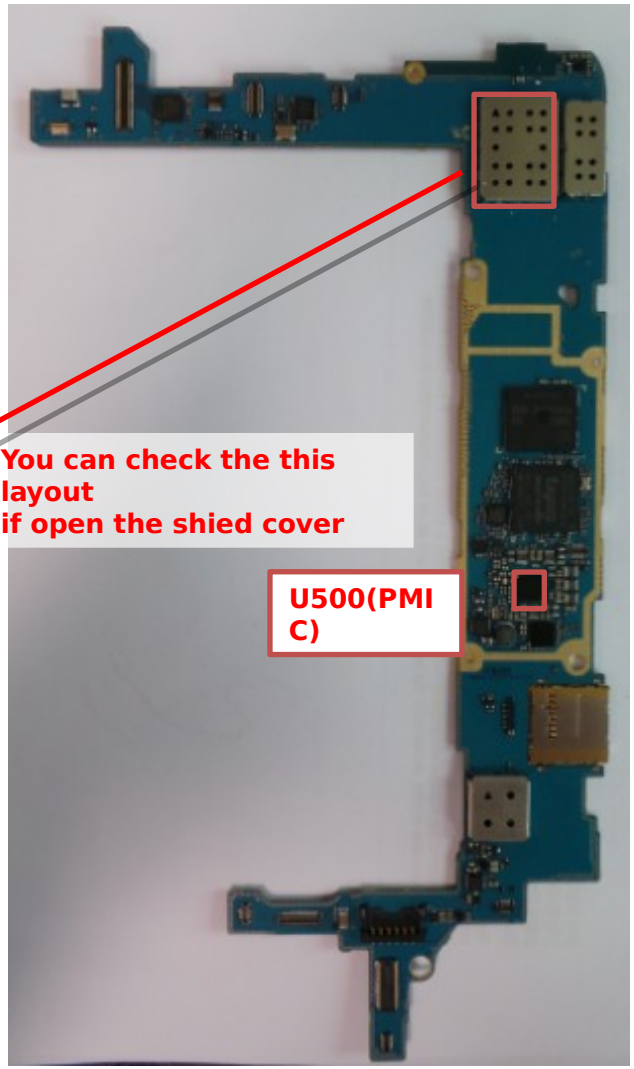
BT/WIFI Problem

Step1

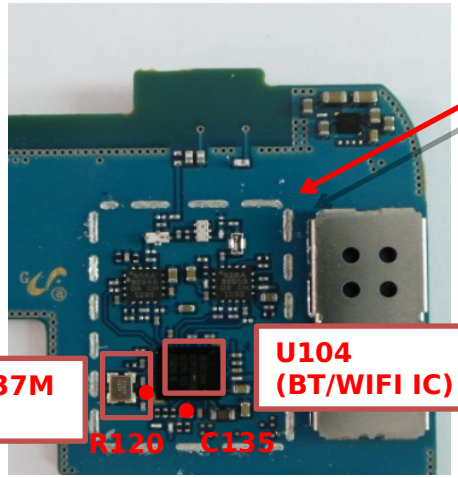
Step2



BT/ WIFI ANTENNA (Carrier TYPE)



Step3,4

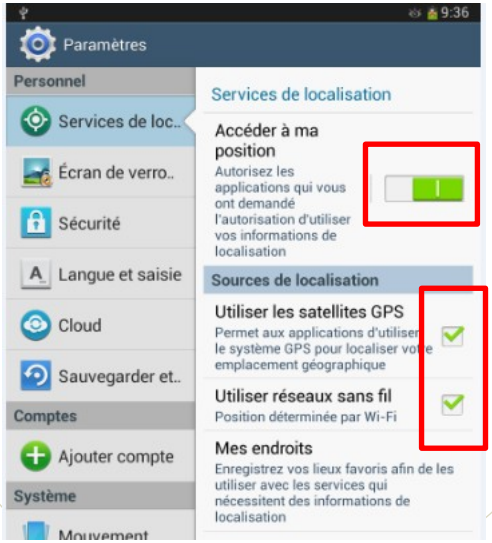


GPS/GLONASS Problem

Step	Check point	Result value	Defect point
1	Confirm the defect symptom (Check the turned on GPS function)	Turned on	Go to the next step
		Turned off	Turn on
2	Check the BT/WIFI Ant. & Ant contact. (Ant. & ANT100, ANT101)	Broken, dust, corrosion	BT/WIFI Ant & ANT100, ANT101
		Normal	Go to the next step
3	Check the voltage of C110, C113, L101 Notice. It should be measured when the GPS path is activated on	C110 = 1.8V C113, L101 = 2.8V	Go to the next step
		If not the correct value	PMIC(U500)
4	Check the clock of OSC100 Notice. It should be measured when the GPS path is activated on	OSC100 = 26Mhz (Same signal compared with a good PBA)	GPS IC(U102) GPS LNA(U101)
		If not the correct value	OSC100

GPS/GLONASS Problem

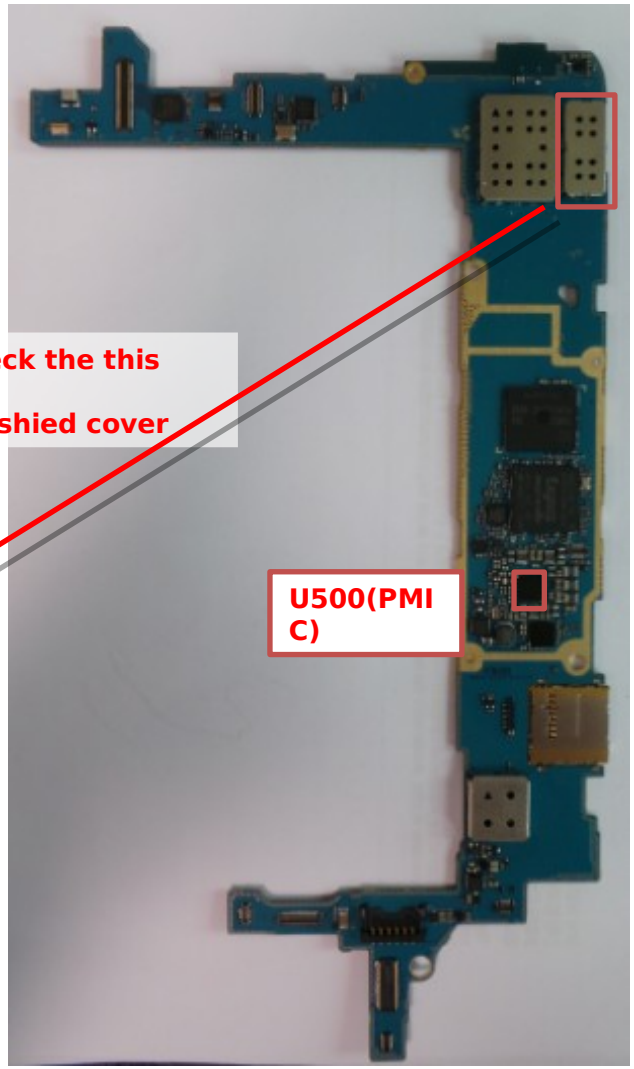
Step1



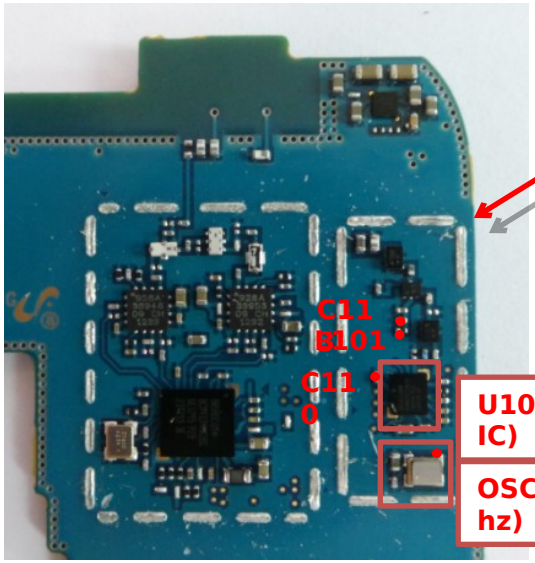
Step2

BT/ WIFI ANTENNA (Carrier TYPE)

You can check the this layout if open the shied cover



Step3,4



Q&A

- **Question**